

# BEST AVAILABLE COPY

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- 18 -

## Claims

1. A shrink film comprising a polyethylene film of thickness 5 to 500  $\mu\text{m}$ , characterized in that said  
5 polyethylene comprises an ethylene homopolymer-copolymer mixture having a molecular weight distribution in the range 5 to 40, and a weight average molecular weight of at least 100 kD.
- 10 2. A shrink film as claimed in claim 1 wherein the homopolymer has a density of 960 to 980  $\text{kg/m}^3$ .
3. A shrink film as claimed in claim 1 or 2 wherein the copolymer has a density of 890 to 920  $\text{kg/m}^3$ .
- 15 4. A shrink film as claimed in any one of claims 1 to 3 wherein the density of the homopolymer-copolymer mixture is 920 to 945  $\text{kg/m}^3$ .
- 20 5. A shrink film as claimed in any one of claims 1 to 4 wherein the Mw of the homopolymer-copolymer mixture is 150 to 300 kD.
- 25 6. A shrink film as claimed in any one of claims 1 to 4 wherein the Mw of the homopolymer-copolymer mixture is at least 230 kD.
- 30 7. A shrink film as claimed in any one of claims 1 to 6 wherein the MWD of the homopolymer-copolymer mixture is in the range 10 to 35.
8. A shrink film as claimed in claim 7 wherein the MWD of the homopolymer-copolymer mixture is in the range 15 to 25.
- 35 9. A shrink film as claimed in any one of claims 1 to 8 wherein the ratio of homopolymer to copolymer in said

- 19 -

mixture is in the range 1:5 to 5:1 by weight.

10. A shrink film as claimed in claim 9 wherein the ratio of homopolymer to copolymer in said mixture is in the range 60:40 to 40:60 by weight.

11. A shrink film as claimed in any one of claims 1 to 10 wherein the copolymer comprises ethylene and 1-butene or ethylene and 1-hexene.

12. A shrink film as claimed in any one of claims 1 to 10 wherein the copolymer comprises an ethylene, 1-butene and 1-hexene terpolymer.

13. A shrink film as claimed in any one of claims 1 to 12 wherein said film has a thickness of 20 to 120  $\mu\text{m}$ .

14. A shrink film as claimed in any one of claims 1 to 13 wherein said shrink film is a multilayer film.

15. A shrink film as claimed in any one of claims 1 to 13 wherein said shrink film is unilamellar.

16. A shrink film as claimed in claim 15 having a thickness of 100 to 200  $\mu\text{m}$ .

17. A shrink film as claimed in any one of claims 1 to 16 wherein said film exhibits at least 15% shrink in the transverse direction upon application of heat.

18. A shrink film as claimed in claim 14 wherein said multilayer film comprises a layer in which at least 95% wt is formed from said ethylene homopolymer-copolymer mixture.

19. A process for wrapping an object comprising applying a shrink film about said object and shrinking

- 20 -

said film by the application of heat thereto, characterized in that said film is a shrink film according to any one of claims 1 to 18.

- 5     20. An object shrink wrapped with a shrink film according to any one of claims 1 to 18.
21. Use of a polyethylene composition comprising an ethylene homopolymer-copolymer mixture having a
- 10    molecular weight distribution in the range 10 to 35, and a weight average molecular weight of at least 150 kD in the manufacture of a shrink film.
22. A polyolefin shrink film having a Dart drop value
- 15    (g)/film thickness ( $\mu\text{m}$ ) of 5 g/ $\mu\text{m}$  or more.
23. The shrink film of claim 22 comprising an ethylene homopolymer/copolymer mixture.
- 20    24. The shrink film of claim 22 or 23 wherein the film is unilamellar.
- 25    25. The shrink film of claim 22 to 24 wherein Dart drop value (g)/film thickness ( $\mu\text{m}$ ) is 6 g/ $\mu\text{m}$  or more.